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CALIFORNIA ENERGY COMMISSION 1516 NINTH STREET SACRAMENTO, CA 95814-5512 www.energy.ca.gov



January 25, 2018

Mr. Scott Galati 2501 Capitol Avenue, Suite 201 Sacramento, CA 95816

Re: Data Request Set #1 for the McLaren Backup Generating Facility (17-SPPE-01)

Dear Mr. Galati:

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff is asking for the information specified in the enclosed data requests to more fully understand the project.

The requested information in Data Request Set #1 (Requests 1-34) covers the technical areas of Aesthetics, Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, and Land Use. Staff requests expedited written responses to the enclosed data requests (Set 1), on or before February 5, 2018, in order to meet the applicant's proposed schedule.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to me and the Committee. The notification must contain the reasons for not providing the information, the need for additional time, or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 651-0966, or email me at leonidas.payne@energy.ca.gov.

Leonidas Payne, Project Manager Siting Office

Enclosure

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MCLAREN BACKUP GENERATING FACILITY (17-SPPE-01) DATA REQUESTS SET 1 (Nos. 1 – 34)

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AESTHETICS

BACKGROUND: Elevation Drawings

The city of Santa Clara's Initial Study/Mitigated Negative Declaration (IS/MND), published in February 2017 for the McLaren Data Center (MDC), was submitted with the Small Power Plant Exemption (SPPE) application as Appendix B Part 1. On pages 20 through 22 in the Project Description discussion, Figures 3.0-7 through 3.0-9 of the city's IS/MND provide elevation drawings for the original project configuration. There are no elevation drawings provided for the new project configuration as described in the SPPE application.

DATA REQUEST

1. Please provide elevation drawings, in similar detail as provided in the city's IS/MND, for the new project configuration.

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AIR QUALITY

BACKGROUND: CONSTRUCTION RELATED EMISSIONS AND IMPACTS

Staff has reviewed the constriction related emissions that were analyzed by the city of Santa Clara in its IS/MND. However, the project has now changed to a larger facility with a different configuration and layout, requiring updated construction-related emission information for the new configuration of the McLaren Backup Generating Facility (MBGF).

DATA REQUEST

2. Please provide emission estimates and impacts analysis for both criteria pollutants and toxic air contaminants for the construction phase of the modified configuration of MBGF.

BACKGROUND: EMERGENCY GENERATOR ENGINE TESTING PROFILE

The applicant states in Appendix E-1, Air Dispersion Modeling Report, section 3.2.1, on page 5 of 7 that the annual engine-testing profile required to ensure availability will be with the first hour at 50 percent load, the next hour at 75 percent load, and the third and fourth hours at 100 percent load. For the oxidation catalyst and the diesel particulate filter, staff needs to understand whether or not the control efficiency drops at lower loads during these relatively short periods of testing, how emissions would change at lower loads and how control efficiencies are maintained with intermittent operations. These effects were not quantified in the application submitted to the Energy Commission.

Pages 43 and 44 of 273 in the Attachment C Manufacturer Performance Data Sheets in Appendix E (TN# 222041-11) show emission rates at different loads. Staff needs to understand whether the control efficiency during intermittent operations was considered in the emission rates shown in Attachment C. Staff also noticed that pages 43 and 44 in Attachment C showed two sets of emission rates: one with potential site variation and the other was shown as nominal data. The applicant used emission rates from nominal data in the application, which are lower than the data with potential site variation. Staff needs to understand how the applicant decided which set of data is more representative of the project site.

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3. Please describe how post-combustion control efficiencies are maintained during intermittent operations and testing.

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- 4. Please explain whether the control efficiency during intermittent operations was considered in the emission rates shown in Attachment C.
- Please justify the use of the nominal data instead of the data with potential site variation.

BACKGROUND: CRITERIA POLLUTANTS MODELING IMPACTS ASSESSMENT

Staff noticed there were no quantitative emissions estimates or impacts analysis for all criteria pollutants except NOx. Staff will need a modeling assessment for impacts of all other criteria pollutants, including Reactive Organic Gases (ROGs), Particulate Matter (PM10 and PM2.5), Carbon Monoxide (CO) and Sulfur Oxides (SOx). During a phone conversation with the applicant's air quality consultant, Ramboll Environ, on January 10, 2018, Energy Commission staff was advised that air quality impact modeling was not required and not performed because the project was below "CEQA threshold guidelines of the BAAQMD" for all criteria pollutants except NOx. However, the BAAQMD CEQA Air Quality Guidelines from May 2017 (http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en) state in Section 3. Screening Criteria page 3-1: "If a project includes emissions from stationary source engines (e.g., back-up generators) and industrial sources subject to Air District Rules and Regulations, the screening criteria should not be used. The project's stationary source emissions should be analyzed separately from the land use-related indirect mobile- and area-source emissions.

Staff will need a modeling assessment for impacts for all other criteria pollutants for Reactive Organic Gases (ROGs), Particulate Matter (PM10 and PM2.5), Carbon Monoxide (CO) and Sulfur Oxides (SOx). Staff will need this information in order to complete their assessment.

DATA REQUEST

Please provide a modeling impacts analysis for the remaining criteria pollutants specified above.

BACKGROUND: CUMULATIVE IMPACTS ANALYSIS

The application produced a cumulative summary as part of the health risk assessment (HRA), which identified 13 projects and a residential street within 1,000 feet of the project site on which McLaren may have cumulative impacts. Staff needs a cumulative modeling analysis, or additional justification why an air quality cumulative modeling

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analysis is not needed for this project, to complete the staff analysis for cumulative air quality impacts.

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- 7. Please provide a list from the Bay Area Air Quality Management District (BAAQMD) of large stationary source projects with permitted emissions for projects with greater than 5 tons per year of permitted emissions of any single criteria pollutant, located within six miles of the project site, including projects that have been recently permitted, or are in the process of being permitted and are reasonably foreseeable.
- 8. Please provide a cumulative impacts modeling analysis in consultation with Energy Commission staff, if necessary, based on the project list provided by BAAQMD.

BACKGROUND: SCREENING ANALYSIS

Page 5 of the document titled MCLAREN DATA CENTER: AIR DISPERSION MODELING REPORT FOR ONE-HOUR NO2 CAAQS AND NAAQS dated November 2017 in Appendix E (TN# 222041-11) shows that each generator would be tested for 4 hours annually and for 5 minutes monthly:

During this 4-hour test, the generator is ramped up in load. The first hour of testing is at 50% load, the second hour is at 75% load, and the last two hours are at 100% load. Generators are also testing (sic) monthly for 5 minutes at 0% load, but this scenario was not modeled since the annual 4-hour test is the more conservative scenario. For comparison with the NAAQS and CAAQS, the most conservative hourly emission rate was used in both models, assuming one hour of testing at 100% load.

Applicants normally do a screening analysis to determine which operating scenario results in worst-case impacts. Even though Table B-3 shows that the 100 percent load testing would have the worst-case emission rates, full load does not always result in worst-case project impacts. During lower load testing, differences in emission rates, exhaust temperatures, and exhaust velocities could lead to lower plume rise and less dispersion, which could result in higher ground-level impacts. Therefore, a screening analysis is needed to determine which operating scenario results in worst-case impacts.

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- 9. Please provide the exhaust temperature, exhaust velocity, and emission rates for the 5 minute testing at 0 percent load.
- 10. Please provide a screening analysis to show which of the above operating scenarios (100 percent load, 75 percent load, 50 percent load, and 0 percent load) results in worst-case impacts (short-term and long-term) for NO₂, PM, SOx, and CO.

BACKGROUND: HOUR-BY-HOUR NO₂ BACKGROUND

Page 2 of the document titled MCLAREN DATA CENTER: AIR DISPERSION MODELING REPORT FOR ONE-HOUR NO2 CAAQS AND NAAQS dated November 2017 in Appendix E (TN# 222041-11) shows that an hour-by-hour representative background NO₂ concentration was added to the modeled concentrations on an hourby-hour basis for comparison against the applicable NAAQS and CAAQS.

However, the U.S. EPA does not recommend pairing modeled and monitored NO₂ on an hour-by-hour basis using hourly concurrent monitored background data. According to the U.S. EPA March 2011 guidance document *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard*:

"However, the implicit assumption underlying this approach is that the background monitored levels for each hour are spatially uniform and that the monitored values are fully representative of background levels at each receptor for each hour. Such an assumption clearly ignores the many factors that contribute to the temporal and spatial variability of ambient concentrations across a typical modeling domain on an hourly basis. Therefore we do not recommend such an approach except in rare cases of relatively isolated sources where the available monitor can be shown to be representative of the ambient concentration levels in the areas of maximum impact from the proposed new source. Another situation where such an approach may be justified is where the modeled emission inventory clearly represents the majority of emissions that could potentially contribute to the cumulative impact assessment and where inclusion of the monitored background concentration is intended to conservatively represent the potential contribution from minor sources and natural or regional background levels not reflected in the modeled inventory. In this case. the key aspect which may justify the hour-by-hour pairing of modeled and monitored values is a demonstration of the overall conservatism of the

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cumulative assessment based on the combination of modeled and monitored impacts. Except in rare cases of relatively isolated sources, a single ambient monitor, or even a few monitors, will not be adequately representative of hourly concentrations across the modeled domain to preclude the need to include emissions from nearby background sources in the modeled inventory."

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- 11. Please provide justification for the use of the hour-by-hour pairing of modeled and monitored NO₂ concentrations according to the above U.S. EPA Appendix W guidance.
- 12. If justification for the use of the hour-by-hour pairing could not be provided, please use the U.S. EPA recommended seasonal hour-of-day or monthly hour-of-day NO₂ background data.

BACKGROUND: GAP FILLING FOR NO₂ BACKGROUND FILES

Page 3 of the document titled MCLAREN DATA CENTER: AIR DISPERSION MODELING REPORT FOR ONE-HOUR NO2 CAAQS AND NAAQS dated November 2017 in Appendix E (TN# 222041-11) shows how the applicant filled missing values in background NO₂ data. For one or two consecutive missing hours, the applicant filled in the larger value of the preceding or following hour; for 3 or more consecutive missing hours, the applicant used 40.6 ppb to replace the missing values. The applicant stated that the 40.6 ppb value is the 98th percentile value for the 5-year period.

However, staff checked the NO₂ data at San Jose Jackson Street station on the ARB website: <u>http://www.arb.ca.gov/adam/topfour/topfour1.php</u>. Staff found that the 5-year average of the 98th percentile NO₂ concentrations for the modeling years (2009-2013) was 50.8 ppb, which is higher than the 40.6 ppb value the applicant used. Staff also found the design value (3-year average) of the most recent three years (2014-2016) to be 47 ppb, also higher than the 40.6 ppb value the applicant used.

Staff needs to understand how the applicant obtained the 40.6 ppb value as the 98th percentile value for the 5 year period. A lower background NO₂ value could possibly lead to lower total impacts of the project.

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13. Please provide references/calculations to show how the 40.6 ppb value was derived.

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- 14. Please update the missing NO₂ data filling procedure to replace the missing values for 3 or more consecutive missing hours with data that agree with the ARB website.
- 15. Please update the modeling with the updated NO₂ data from the above step, including updated ozone values, if needed after considering the ozone value data requests below.

BACKGROUND: GAP FILLING FOR OZONE BACKGROUND FILES

Page 3 of the document titled MCLAREN DATA CENTER: AIR DISPERSION MODELING REPORT FOR ONE-HOUR NO2 CAAQS AND NAAQS dated November 2017 in Appendix E (TN# 222041-11) shows that the applicant substituted missing ozone data with a 98th percentile value of 50 ppb.

Staff has not seen any NO₂ impact analysis using the 98th percentile value to substitute for missing ozone data. Staff believes that using this approach might underestimate NO₂ impacts, especially for the 1-hour NO₂ CAAQS compliance demonstration.

Staff checked the ozone data files that the applicant provided. Staff sorted the ozone data in the files and calculated the 5-year average 98th percentile value (8th highest daily maximum 1-hour concentration) to be 72.8 ppb, which is higher than the 50 ppb value that the applicant said they used. Staff needs to understand how the applicant obtained the 50 ppb value as the 98th percentile for the ozone data.

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- 16. Please justify the approach of using the 98th percentile value to substitute for the missing ozone data.
- 17. Please provide references/calculations to show how the 50 ppb value as the 98th percentile ozone value was derived.
- 18. Please update the missing ozone data filling procedure with more reasonable or more conservative data, as appropriate.
- 19. Please update the modeling with the updated ozone data from the above step, as appropriate, also including updated NO_2 data as appropriate.

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BACKGROUND: EXHAUST PARAMETERS OF THE LIFE SAFETY GENERATOR

Table 6 in Appendix E-1 (TN# 222104) shows the exhaust parameters used in the modeling. The exhaust parameters of the life safety generator were also provided in the manufacturer's "spec" sheet in Attachment C of Appendix E (TN# 222041-11). Staff noticed the following inconsistencies between the parameters shown in Table 6, those actually used in the NO₂ modeling files, and those from the manufacturer's "spec" sheet. Staff needs to understand why the modeled parameters are different from those provided in the manufacturer's "spec" sheet.

· · · · · · · · · · · · · · · · · · ·	Table 6 (TN# 222104)	Modeling files	Manufacturer's spec sheet (TN# 222041-11)
Exhaust temperature (K)	823.15	809.81	823.15 (1022 °F)
Exhaust diameter (m)	0.2	0.2	0.127
Exhaust velocity (m/s)	49.34	49.34	126.3 ^a

Note: ^a Staff calculated the exhaust velocity based on the exhaust flow rate (96 m³/min) and exhaust diameter (0.127 m) shown in the manufacturer's spec sheet.

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- 20. Please explain why the modeled parameters are different from those provided in the manufacturer's spec sheet.
- 21. Please explain why the exhaust temperature used in the modeling files is lower than those shown in Table 6 and the manufacturer's spec sheet.
- 22. Please update the AQ and HRA modeling if needed.

BACKGROUND: RECEPTORS

Staff has reviewed the document titled "Air Quality Technical Report Replacement for MBGF Application for SPPE - Appendix E-1". The applicant reported the health risk impacts of the maximally exposed individual sensitive receptor (MEISR) in Table ES-2 and Table 13. However, MEISR is equivalent to the receptor of the maximally exposed individual (MEI) at a residence, or a MEIR. Staff would like to get information of health

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risk impacts of other receptors, including the hypothetical point of maximum impact (PMI) and the maximally exposed individual worker (or MEIW), off-site.

DATA REQUEST

- 23. Please provide the health risk impacts (including cancer risk, chronic non-cancer health index, acute non-cancer hazard index, and UTM coordinates) of both construction and operation for the following receptors:
 - a. Point of maximum impact (PMI),
 - b. Maximally exposed individual worker (MEIW), off-site; and,
 - c. The soccer facility south of the project site.

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BIOLOGICAL RESOURCES

BACKGROUND: NITROGEN DEPOSITION AND IMPACTS TO SPECIAL PLANT COMMUNITIES

The MBGF would be located approximately 1 mile west-southwest of the Guadalupe River corridor, a dedicated open space area containing wetlands, riparian woodlands, and aquatic habitats. The MBGF would also be located approximately 4 miles southeast of Baylands Park, which contains a preserve of 105 acres of seasonal wetlands. Operation of the proposed emergency diesel backup generators would result in emissions of oxides of nitrogen (NOx) which could, depending on the height and velocity of the emission plume from the generators, negatively impact the special-status plant and wetland communities in the Guadalupe River corridor and Baylands Park. Such communities are often rare and support many of California's rare and endangered plant and animal species. Nitrogen deposition has several detrimental effects on these plant communities, including decreased plant function due to leached nutrients (e.g., calcium) from the soil: loss of fine root biomass; decreases in symbiotic mycorrhizal fungi; promotion of exotic invasive species; and leaching into surface waters and ground waters, which increases acidification. Because of the negative effects of soil nitrification it is desirable to estimate the changes in nitrogen deposition that could occur as a result of the new diesel backup generators.

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24. Please quantify the existing baseline total nitrogen deposition rate, in the vicinity of the proposed MBGF, in kilograms per hectare per year (kg/ha/yr). The geographical extent of the nitrogen deposition mapping should be directed by the results, i.e. extend geographically to where the deposition is considered below any stated threshold of significance for vegetation communities. Thresholds for nitrogen deposition by vegetation type are available within the March 2007 California Energy Commission report, titled "Assessment of Nitrogen Deposition: Modeling and Habitat Assessment," available at:

http://www.energy.ca.gov/2006publications/CEC-500-2006-032/CEC-500-2006-032.PDF, and the May 2006 California Energy Commission PIER report, titled "Impacts of Nitrogen Deposition on California Ecosystems and Biodiversity," available at: http://www.energy.ca.gov/2005publications/CEC-500-2005-165/CEC-500-2005-165.PDF. Please include references and guidelines used in your baseline analyses.

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- 25. Please use AERMOD or an equivalent model to provide an analysis of impacts due tototal nitrogen deposition from operation of the MBGF. The analysis should specify the amount of total nitrogen deposition in kg/ha/yr at the Guadalupe River corridor and Baylands Park and any other sensitive vegetation communities or habitats that occur within 6 miles of the project area for wet and dry deposition. Please provide complete citation for references used in determining this number.
- 26. Please provide an isopleths graphic over the most recent aerial photographs (or equally detailed maps) of the direct nitrogen deposition rates caused by the MBGF. This will be a graphical depiction of the project's nitrogen deposition.
- 27. Please provide a comprehensive cumulative impact analysis for the nitrogen deposition in kg/ha/yr caused by MBGF in combination with other reasonably foreseeable projects and provide an isopleths graphic over the most recent aerial photographs of the nitrogen deposition values.

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CULTURAL RESOURCES

BACKGROUND

Staff identified information needed to complete a comprehensive cultural resources analysis of the proposed MDC and MBGF that was not included with the previously submitted IS/MND and SPPE application. Providing this information would ensure staff's ability to assess the analysis contained in the SPPE application and conduct its own independent analysis. For each data requests below, please provide responses for any parts of the project not already researched, surveyed, and reports provided and analyzed in the city's IS/MND.

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Staff requests the following information to complete their analysis.

- 28. Please provide the results of a literature search from the California Historical Resources Information System (CHRIS) Northwest Information Center (NIC) at Sonoma State University conducted within the last year. The record search should include the proposed substation. The results should identify any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum. The literature search should be completed by, or under the direction of, individuals who meet the Secretary of the Interior's Professional Standards for the technical areas addressed.
- 29. Please provide copies of California Department of Parks and Recreation (DPR) 523 forms (Cal. Code Regs., tit. 14, § 4853) for all cultural resources for which 523 forms were not already submitted to the city of Santa Clara (ethnographic, architectural, historical, and archaeological) identified in the literature search as being 45 years or older or of exceptional importance as defined in the National Register Bulleting Guidelines, (36 C.F.R., § 60.4(g)).
- 30. Please provide a copy of the USGS 7.5' quadrangle map of the literature search area delineating the areas of all past surveys. CHRIS identifying numbers shall be provided. Copies also shall be provided of all technical reports whose survey coverage is wholly or partly within 0.25 miles of the area surveyed for the project, or which provide information on any archaeological excavations or architectural surveys within the literature search area
- 31. Please provide the results of new surveys or surveys less than 5 years old if survey records of the area potentially affected by the project are more than 5

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years old. Surveys to identify new cultural resources must be completed by (or under the direction of) individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed.

Please conduct pedestrian archaeological surveys, inclusive of any parts of the project site not previously surveyed for the city's IS/MND, extending to no less than 200 feet around the project site, substations, and staging areas. If the applicant believes that a pedestrian archaeological survey is not necessary for a cultural resources analysis of this project, please justify that reasoning based on the results of a literature search and the current on-the-ground conditions of the proposed project site.

Please provide historic architecture field surveys, not previously provided for the city's IS/MND, in urban and suburban areas to include properties no less than one parcel's distance from all proposed project site boundaries. The survey shall include the Southern Pacific Railroad tracks to the east, the parcels to the south across Mathew Street, the parcels to the west, and the parcels north of the railroad easement on the northern property boundary. If the applicant believes that a historic architecture field survey is not necessary for a cultural resources analysis of this project, please justify that reasoning based on the results of a literature search and the current on-the-ground conditions of the proposed project site.

- 32. Please provide a technical report of the results of the new surveys, conforming to the Archaeological Resource Management Report format (OHP 1990), submitted under confidential cover if archaeological site locations are included. The report should also include:
 - a summary of the literature search and all correspondence with the NIC,
 - the survey procedures and methodology used to identify cultural resources and a discussion of the cultural resources identified by the surveys,
 - copies of all new and updated DPR 523(A) forms, and appropriate DPR 523 detail forms,
 - a map at scale of 1:24,000 U.S. Geological Survey quadrangle depicting the locations of all previously known and newly identified cultural resources,

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- the names and qualifications of the cultural resources specialists who contributed to and were responsible for literature searches, surveys, and preparation of the technical report, and
- a discussion of proposed mitigation measures to mitigate any impacts to known, previously unknown, and any unanticipated cultural resources.

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GREENHOUSE GAS EMISSIONS

BACKGROUND: UPDATED GREENHOUSE GAS GLOBAL WARMING POTENTIALS (GWPs)

The GWPs for CH_4 and N_2O were updated in the US EPA's Federal Register (FR) final rule published on November 29, 2013 [78 FR 71904] and effective on January 1, 2014.

DATA REQUEST

33. Please update the GWPs and re-compute emissions from the Air Quality and Greenhouse Gas Technical Report of Appendix E, Table 1A titled, Emergency Generator Emission Factors, and Table 1B titled, Life Safety Generator Emission Factors.

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LAND USE/PLANNING

BACKGROUND

The SPPE application includes Figure 2-1, "General Arrangement and Site Layout," which conceptually shows areas for the data centers and diesel generators. No areas are shown for other project features (e.g., the electrical substation, parking areas, and mechanical equipment yards). Staff anticipates including a description of areas and locations for the main project features in the Land Use and Planning section of the analysis.

DATA REQUEST

34. Please provide an updated figure(s) showing the general arrangement and site layout that includes the main project features, similar to the site plans shown in the city's February 2017 IS/MND. Please label the project features shown on the figure(s).